

CLAIMS

1. A method for enhancing the activity of an antibody, which comprises making the antibody into a single-chain polypeptide comprising two or more light chain variable regions and two or more heavy chain variable regions linked via linkers.

2. A method for enhancing the activity of an antibody, which comprises linking a first polypeptide to a second polypeptide by a linker, wherein the first polypeptide comprises the antibody's heavy chain variable region and light chain variable region and the second polypeptide comprises the antibody's heavy chain variable region and light chain variable region.

3. A method for enhancing the activity of an antibody, which comprises converting the antibody into an sc(Fv)₂.

4. The method according to any one of claims 1 to 3, wherein the activity is an agonistic activity.

5. The method according to any one of claims 1 to 4, wherein the linker is a peptide linker.

6. The method according to claim 5, wherein the length of the peptide linker is 5 to 30 amino acids.

7. The method according to claim 6, wherein the length of the peptide linker is 12 to 18 amino acids.

8. The method according to claim 7, wherein the length of the peptide linker is 15 amino acids.

9. An antibody whose activity has been enhanced by the method according to any one of claims 1 to 8.

10. A method for producing the antibody of claim 9, which comprises:

(a) preparing a DNA that encodes two or more antibody heavy chain variable regions, two or more antibody light chain variable regions, and peptide linkers linking each of the variable regions;

(b) constructing a vector comprising the DNA;

(c) introducing the vector into a host cell; and

(d) culturing the host cell.

11. The production method according to claim 10, wherein the DNA encodes two heavy chain variable regions, two light chain variable regions, and three peptide linkers.

12. The production method according to claim 11, wherein the DNA is encoded in the order of: heavy chain variable region, peptide linker, light chain variable region, peptide linker, heavy chain variable region, peptide linker, and light chain variable region.